Introduction

Natural resources contribute to Wilton's community character, quality of life, and recreation opportunities. They also play a role in determining the type and location of development. Natural resources in Wilton include forests, conservation land, wildlife, reservoirs, and streams, as well as natural systems that cannot be seen as easily. These natural systems provide valuable services to the Town free of charge, including flood storage, clean air, water purification, productive soils, wildlife habitat, waste recycling, and temperature moderation. Loss of these services impacts human health, safety, the economy, and quality of life.

This chapter divides Wilton's natural resources into two broad categories—water and land-based resources and services. Within each category there is a discussion of the specific resources present in Wilton, resulting land use implications, and recommendations for further consideration.

Vision

The community will preserve visual character of the community by protecting its natural, historic, scenic and agricultural resources. Wilton will promote the conservation, protection and sound management of the Town's natural resources. Wilton will provide a broad range of recreational activities for all ages and user groups. Wilton will protect and preserve its historical resources.

Natural Resources and the Town of Wilton

Support for Natural Resource Protection in Wilton

In 2012, the Town of Wilton sent out a community survey. Respondents were asked to identify the five features most important in making Wilton a desirable place to live. 71.9% (100 of 139 responses) answered "rural character." In addition, 88.9% of the respondents (113 of 127 responses) rated rural character as an economic strength for Wilton. From this input it can be deduced that Wilton's rural character has a high value to its residents and its natural resources play an important role in contributing to the Town's rural character.

At the same time, respondents were not concerned about the potential for losing the Town's natural resources. When asked what the biggest concerns currently in Wilton are, only 18.7% (26 of 139 responses) identified loss of conservation land/natural resources and 20.1% (28 out of 139 responses) stated loss of rural character. Respondents were also asked to identify their biggest concerns in the next ten years. Again, only 21.8% (29 of 133 responses) selected loss of conservation land/natural resources and 33.1% (44 out of 133 responses) stated loss of rural character.

There was strong support for limiting the impact of development on natural resources. 87.3% of respondents (117 of 135 responses) of the Community Survey stated that the town should require maintenance of surrounding natural resources for new development. In addition, 74.8% (101 of 135 responses) said the Town should require maintenance of adequate buffers and setbacks from wetlands.

Role of the Town of Wilton

The Town of Wilton can play an important role in promoting and preserving the natural resources that are so critical to its quality of life and community character. Thoughtful planning can ensure that natural services remain intact and functional for the wellbeing of all citizens and that public access is maintained to natural resources used for recreation. Wilton has adopted a number of ordinances designed to protect its natural resources.

- Wilton Land Use Laws & Regulations, Zoning Ordinance 10.0, Floodplain Conservation District—the regulations in this district apply to all lands designated as special flood hazard areas by FEMA.
- Wilton Land Use Laws & Regulations, Zoning Ordinance 11.0, Wetlands Conservation District—the regulations in this District are intended to guide the use of land with extended periods of high water tables, in the interest of public health, convenience, safety, and welfare.
- Wilton Land Use Laws & Regulations, Zoning Ordinance 12.0, Aquifer Protection District—the purpose of this district is to protect, preserve, and maintain existing and future municipal water supply sources of the Town by regulating the uses of land over known aquifers and their recharge areas, so as to protect such supplies from contamination caused by adverse or incompatible land use practices or developments.
- Wilton Land Use Laws & Regulations, Zoning Ordinance 14.0, Watershed District—the purpose of this district is to preserve water quality and to protect the health and welfare of the residents of the Town by minimizing sources of pollution through regulation and restriction of population density and activity, and by keeping organic and inorganic wastes to a minimum.

Water-Based Resources

Watersheds

A watershed is an area of land that drains downslope through a network of drainage pathways to the lowest point. These pathways can be underground or on the surface and they typically become progressively larger as the water moves downstream. Watersheds vary in size and every stream, tributary, and river has an associated watershed. Small watersheds join to become larger watersheds. Wilton lies within the Souhegan River watershed, which is part of the larger Merrimack River watershed.

There is a significant interconnectivity in watersheds between tributaries and the Souhegan River, surface water, ground water, and wetlands. In addition, because water flows downstream, an action that impacts water quality, quantity, or rate of movement in one location can affect locations downstream as well. For this reason, all neighborhoods and communities within a watershed must work together to make sound land use decisions.

Major Surface Water Bodies

Souhegan River and its Tributaries

The Souhegan River is a 33.8 mile long tributary of the Merrimack River. 7.4 miles of the Souhegan River flows through Wilton. The river is used for water supplies, hydropower, and recreation. In 2000, the Souhegan River was protected as a Class B River by the NH Rivers Management and Protection Act. With a Class B designation the Souhegan is considered acceptable for fishing, swimming, and other recreational purposes, and for use as a water supply after adequate treatment has been applied.

The Souhegan River Watershed contains numerous tributary streams of varying sizes. There are approximately 271 miles of rivers and stream in the watershed and 103 miles of intermittent streams. Tributaries within the Town of Wilton include:

- Temple Brook—originates in southeast Temple and flows approximately 4.2 miles northeast to west Wilton, where it converges with Blood Brook.
- Blood Brook—flows approximately 7 miles southeast from Sharon through Temple to west Wilton where it converges with Temple Brook to form Gambrel (Gambol) Brook, which flows into the Souhegan River.
- Mill Brook—originates in Temple and flows 7.4 miles through Wilton to its convergence with Stony Brook; it is the only Class A water in the watershed (meaning it is considered to be of highest quality and considered optimal for use as water supply after adequate treatment and that no sewage discharge is allowed).
- Stony Brook—approximately 9.6 miles long, rises in the hills of Lyndeborough, flows west into Greenfield, then swings back southeast through Lyndeborough into downtown Wilton where it converges with the Souhegan River.
- Tucker Brook—originates in a wetland in southeast Wilton and flows approximately 4.5 miles northeast to its convergence with the Souhegan River in Milford.

Ponds and Reservoirs

Wilton's ponds and reservoirs are an important resource for wildlife habitat, water supply, flood control, and outdoor recreation. Table 1 on the following page is a partial inventory of ponds and reservoirs in Wilton greater than 2 acres. In addition, there are approximately 50 unnamed ponds under 2 acres in size.

Table 1. Ponds and Reservoirs Inventory

Name of Waterbody	**Size**
Heald Pond	Area: 65 acres * Elevation: 827 feet
New Wilton Reservoir	Area: 22 acres* Elevation: 618 feet
NH Flood Control Site (Site 15)	Area: 69 acres Elevation: 835 feet
Batchelder Pond	Area: 6 acres Elevation: 819 feet
NH WRB Flood Control Pond (Temple-Wilton)	Area: 45 acres Elevation: 740 feet
Beaver Dam Brook Flood Control Pond (Site 33)	Area: 5 acres Elevation: 680 feet
Rhododendron Swamp	Area: 30 acres Elevation: 575 feet
Frog Pond	Area: 4 acres* Elevation: 465 feet

**Calculation based on data courtesy of GRANIT. Elevations based on contour map.*

Watershed District

The Town of Wilton's major watersheds are protected by Section 14.0 – Watershed District in the Zoning Ordinance. The stated purpose of the Watershed District is "to preserve the quality of the water and to protect the health and welfare of the residents of the Town of Wilton by minimizing sources of pollution through regulation and restriction of population density and activity, and by keeping organic and inorganic wastes to a minimum.

District boundaries are those land and water areas which by seepage or flow introduce water into both the old and new reservoirs in the Town, inclusive of the Mill Brook and Stockwell Brook watersheds above the reservoirs as delineated on the official zoning map for the Town.

The District's regulations include lot area, frontage, setback requirements, erosion and sediment control requirements, and those uses which are prohibited such as use of hazardous and toxic materials and liquids, pasturing limitations, grading restrictions, and uses other than residential or agricultural.

Wetlands

Importance and Function of Wetlands

Wetlands are areas that have water at or near the surface, saturated soils for at least part of the year, and plants that are tolerant of wet conditions. Swamps are the most common type of wetland in New Hampshire and are simply forested wetlands. New Hampshire is approximately 6-10% wetlands and has the distinction of being one of only three states to have retained over 80% of its wetlands since 1780.(NH DES).

Wetlands provide a number of critical services to communities. One of the most important is their protection of water quality and drinking water. Wetlands remove excess nitrogen and retain sediments that contain contaminants such as heavy metals and excess nutrients, thus assisting in providing protection of water quality and drinking water and preventing these contaminants from entering waterways and downstream pollution. Wetlands also play an important role in flood prevention and maintenance of water flow. During periods of flooding, wetlands decelerate runoff from upland areas and release it slowly, decreasing peak flood flows and mitigating flood damage. In dry periods, wetlands feed streams through groundwater discharge, which maintains in-stream flow and is important for water supply and wildlife habitat.

Wetlands provide vital wildlife habitat for species of all types, including almost two-thirds of the habitat of the state's most threatened wildlife. Wetland habitats that support wildlife range from isolated vernal pools on which amphibian species rely for breeding to swamp lands that moose utilize for their food source.

Finally, wetlands support recreation and both the local and statewide economy which is heavily based on natural resources and tourism. Quality of life in Wilton is dependent on clean water, wildlife, and outdoor recreation, to which wetlands greatly contribute.

Based on the National Wetlands Inventory (NWI) there are approximately 525 acres of wetland soils located in Wilton. This represents about 3.19% of the total 16,447.3 acres covered by the Town. The majority of these wetland areas are located adjacent to rivers, streams and ponds. There are however, a few isolated wetlands scattered throughout the Town. Wetlands are shown on Map 1.0.

Wilton's Wetlands Conservation District Ordinance

The regulations imposed by the Wetlands Conservation District guide the use of wetlands in Wilton for the purpose of preventing detrimental actions or effects. The ordinance is structured around four key purposes:

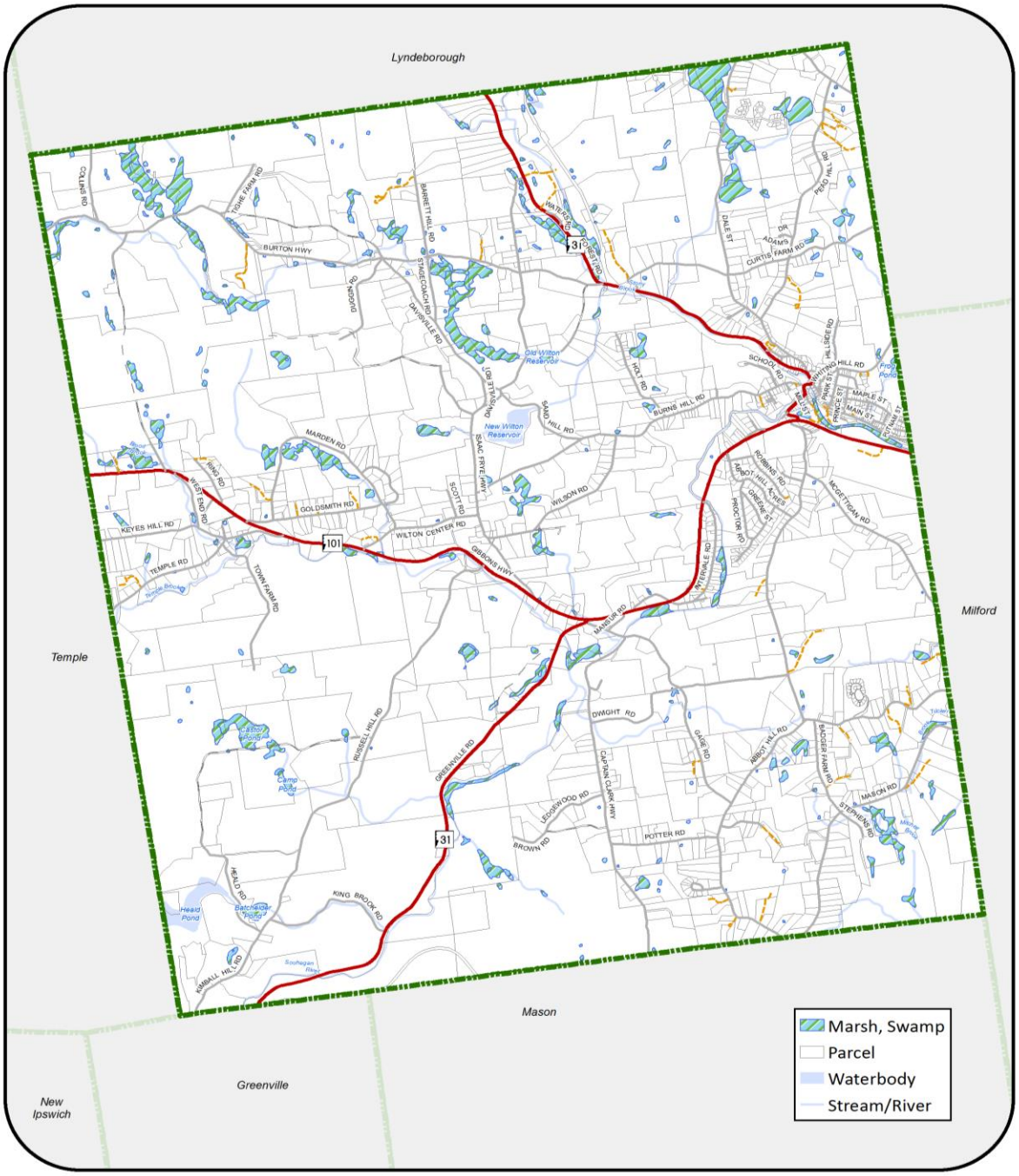
- Prevent the development of structures and land uses on naturally occurring wetlands which would contribute to pollution of surface and groundwater by sewage.
- Prevent the destruction of natural wetlands which provide flood protection.

- Prevent unnecessary or excessive expenses to the Town to provide and maintain essential services and utilities which arise because of inharmonious use of wetlands.
- Encourage those uses that can be appropriately and safely located in wetland areas.

The ordinance regulates items such as boundaries, permitted uses by right and by special exception, and setbacks. For more information see the Wetlands Conservation District, Section 11, of the Wilton Land Use Laws: Zoning Ordinance.

Surface waters, wetlands and soil types determine the location of septic systems and the suitability of land to support individual systems. The Town has limited resources to adequately determine soil types from information provided on septic plans and limited enforcement capability to address potential health-related issues as they arise. The Town should conduct further study on methods, such as more stringent setback requirements, which can assist in proper location of septic systems.

MAP 1—Rivers, Streams, Ponds and Wetlands



Data Source(s): 2006
Wetlands – New Hampshire National Wetlands Inventory (NWI), courtesy NH Granit
Waterbodies, Rivers, and Streams – New Hampshire Hydrology Dataset (NHHD), courtesy NH Granit
Parcels, Roads – NRPC GIS Database -

Flood Storage Lands/Floodplains

Importance of Flood Storage Lands

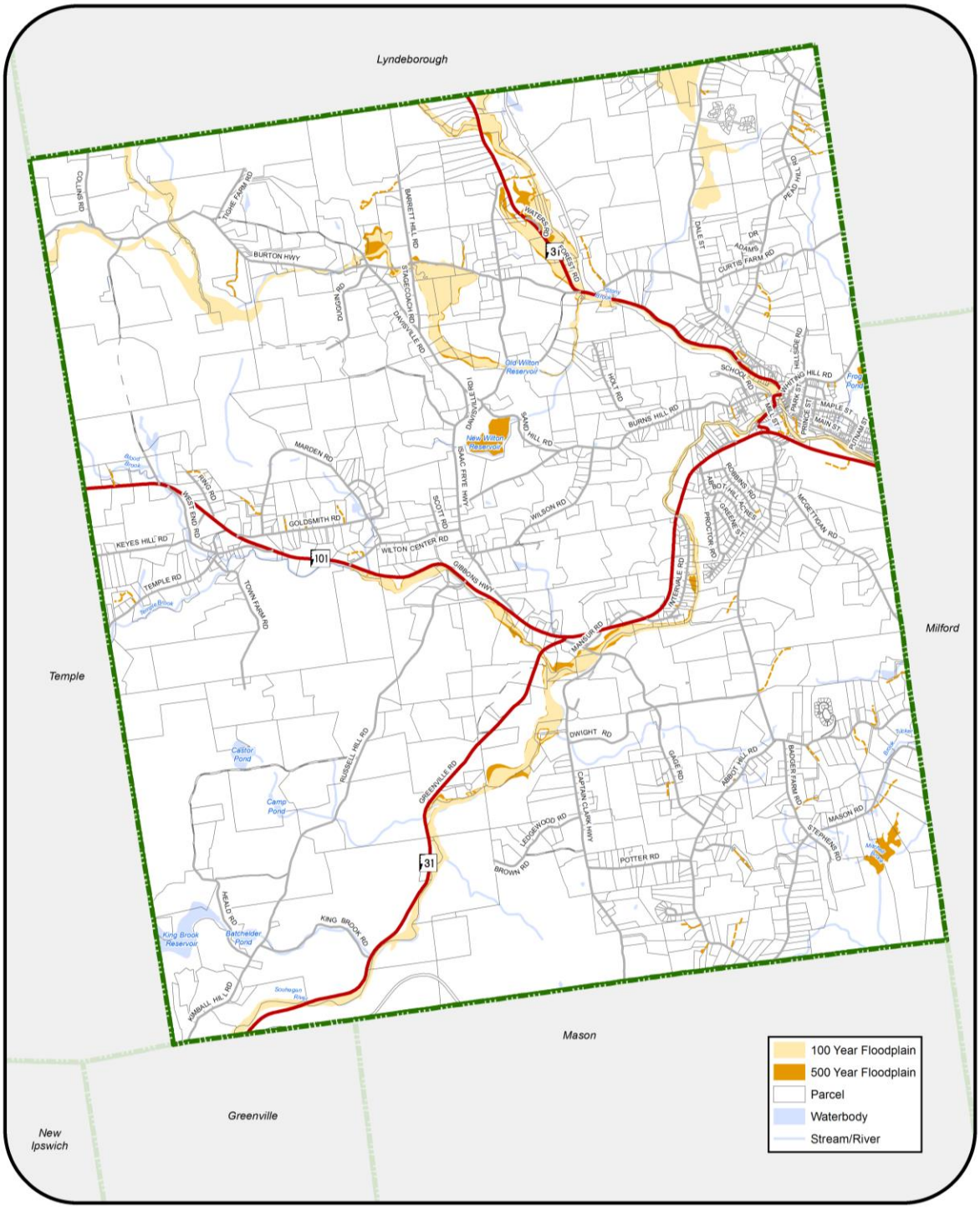
New Hampshire has more than 16,000 miles of rivers and streams. Communities have historically developed along these waterways, placing infrastructure and property in flood hazard prone areas or land subject to the risk of flooding. Riverine flooding is the most common disaster event occurrence in New Hampshire. In recent years, some areas of the State have experienced multiple disastrous flood events at recurrence intervals of less than 10 years. Locally, severe flooding occurred in April 2007 and October 2008 resulting in thousands of dollars of property damage.

Wetlands provide natural flood storage to a community. According to the US Environmental Protection Agency one acre of wetland can typically store one million gallons of water. In addition, trees and other wetlands vegetation slow the speed of flood water, which when combined with flood storage can lower flood heights and decrease destruction.

Floodplain Conservation District

Wilton's Floodplain Conservation District is centered on a 100-year flood elevation zone as determined by the Federal Emergency Management Agency. A 100-year flood elevation is the "base flood" level having a one percent (1%) chance of being equaled or exceeded in any given year. For example, all new construction in a flood zone, as determined by the Wilton Building Inspector, must have improvements resistant to flood damage such as watertight walls and utilities (electrical, heating, plumbing, ventilation, and air conditioning) that are designed to prevent water from entering. New construction must also elevate the bottom floor (including the basement) of all structures to or above the 100-year flood level. For more information see the Floodplain Conservation District, Section 10, of the Wilton Land Use Laws: Zoning Ordinance.

MAP 2—Floodplains in Wilton



Data Source(s): - 2013
Floodplains – FEMA Digital Flood Insurance Rate Map (DFIRM), courtesy NH GRANIT

Water Supply Lands

Aquifers

Aquifers are areas of the subsurface that are water bearing. Although there are aquifers underlying almost all of New Hampshire, an aquifer's ability to provide a source of groundwater for water supply is greatly influenced by the ability of the subsurface rock and soil types to transmit the flow of water. As groundwater moves through the overburden and rock fractures in the aquifer area it gravity flows downhill and to areas of lower pressure. In general groundwater discharges to surface waters, although surface waters and wetlands can also recharge aquifers.

The following types of aquifers exist within the boundaries of the Town:

Stratified Drift Aquifers

Stratified drift aquifers are composed of sand and gravel deposited by the melting of glacial ice. These deposits may be quite extensive, layered or "stratified" and coarse in texture. This coarse texture allows for the storage of large volumes of water and the high porosity allows groundwater to flow through quite readily. Because of their potential to yield large volumes of water, stratified drift aquifers are considered prime sources of water for municipalities or other large volume users.

The United States Geological Survey (USGS) recently conducted a survey of stratified drift aquifers in the NRPC region. The location and extent of the stratified drift aquifers in Wilton is shown in detail on the maps produced as part of the USGS Aquifer Delineation Study. The general locations of aquifers in Wilton, with associated transmissivity rates, are shown on Map 3. The map delineates the aquifer based on transmissivity and material composition. Transmissivity is the capacity of the aquifer to transmit water measured in feet squared per day. Aquifers are classified in four basic types based on material composition. Material composition is directly related to the storage capacity and transmissivity of the aquifer, for example coarse grained stratified drift is more porous than fine grained stratified drift and therefore it has a greater capacity to store and transmit water. The following excerpt is the USGS aquifer study description of Wilton's stratified drift aquifers:

> "Permeable stratified drift covers 5.2 square miles or about 20 percent of Wilton. These stratified drift deposits are found in continuous bands along Stony Brook, Blood Brook, a Stony Brook tributary, and the Souhegan River."
> (http://pubs.usgs.gov/wri/wrir_95-4100/pdf/wrir_95-4100.pdf)

The USGS aquifer study further identified the most important stratified drift aquifer available for additional water supply development in Wilton is along the Souhegan River near New Hampshire State Routes 101 and 31. This aquifer extends from the Massachusetts border northward toward Wilton Center and westward up the valley on Blood Brook. Seismic-refraction and test-well data indicate the presence of about 80 feet of saturated sand and gravel in this area. Well W-6 in this aquifer has a yield of 500 gallons/minute. Transmissivity in the most thickly saturated part of this aquifer is greater than 8,000 square feet per day.

The aquifer along Stony Brook south of the Wilton-Lyndeborough town line is of limited area extent but contains at least 40 feet of saturated sand and gravel. Potential exists for induced recharge from Stony Brook to supplement the yield of this aquifer. Although the transmissivity of this aquifer is less than 8,000 square feet per day, the aquifer may, upon testing, have the capacity to sustain one large-yielding well.

All other stratified drift aquifers in Wilton, including those in valleys of upper Blood Brook, Stony Brook tributary and lower Souhegan River contain stratified drift with transmissivity generally less than 2,000 square feet per day. This stratified drift is best suited for supplying water to individual households or other small users.

Till Aquifers

Till aquifers, like stratified drift aquifers, are also composed of glacial material. Material porosity and thickness are the main differences between till and stratified drift aquifers. Till aquifers contain an unsorted mixture of clay, silt and gravel that were ground up from solid rock by the glacier. This mixture of different sized particles limits the available pore space for water storage. Therefore, it is difficult for these deposits to store and transmit water. Wells drilled in till usually yield only small volumes of groundwater adequate for private residential use.

The only protection mechanism provided for wells in till deposits is the minimum setback requirements from property boundaries and septic leach fields. To protect these individual water supplies the Town should consider adopting more stringent setback requirements to prevent contamination.

Bedrock Aquifers

Bedrock aquifers are composed of fractured rock or ledge with groundwater stored in the fractures. These aquifers are very complex because bedrock fractures decrease with depth, "pinch out" over short distances and do not carry much water. Locating water supply wells in bedrock aquifers is often a hit or miss proposition because it is difficult and costly to determine the location of fractures. Bedrock aquifers exist in Wilton and are used for individual wells. Again, the only source of protection for bedrock aquifers is minimum requirements from property lines and septic leach fields. Recharge areas for bedrock aquifers are difficult to pinpoint which complicates any effort of protection.

Importance of Aquifers to Wilton's Water Supply – Aquifer Protection District

Aquifers are primarily recharged by precipitation and are highly susceptible to pollution from the surface due to the ease and speed with which water-borne pollutants are transmitted through the soil. Insecticides, septic tank effluent, leaking underground storage tanks, landfill leachate or improperly stored hazardous wastes are potential sources of aquifer pollution. In addition, development which involves extensive amounts of impervious material cover (e.g. asphalt or cement) can reduce the productivity of aquifer areas. Extensive sand and gravel excavations can also have a negative impact on aquifers and removal of too much material increases the likelihood of contamination. Decreasing the amount of material overlaying the aquifer increases the potential for the contaminant to infiltrate into

the aquifer at an increased rate and at an increased concentration. Therefore, the Town should adopt sand and gravel excavation regulations to protect the integrity of the aquifer and preserve the quality of the groundwater.

It is imperative that the Town protect its stratified drift aquifers to ensure the continued availability of the quantity and quality of its groundwater resource. The existing Aquifer Protection District provides a fairly strong level of protection for the Town's aquifers and groundwater supplies.

The Aquifer Protection District sets forth the land uses and activities allowed and prohibited in the areas identified as stratified drift aquifers by the USGS Aquifer Delineation Study. The District boundaries (Wellhead Protection Area) are delineated on mapping done by Emery and Garrett Groundwater, Inc. and the Nashua Regional Planning Commission and shown on the "WHPA Delineation – Abbott and Everett Production Wells Wilton, NH". The District is generally located south of NH Route 101 and straddles the area between Russel Hill Road, NH Route 31 and Davidson Road. For more information see the Aquifer Protection District, Section 12, of the Wilton Land Use Laws: Zoning Ordinance.

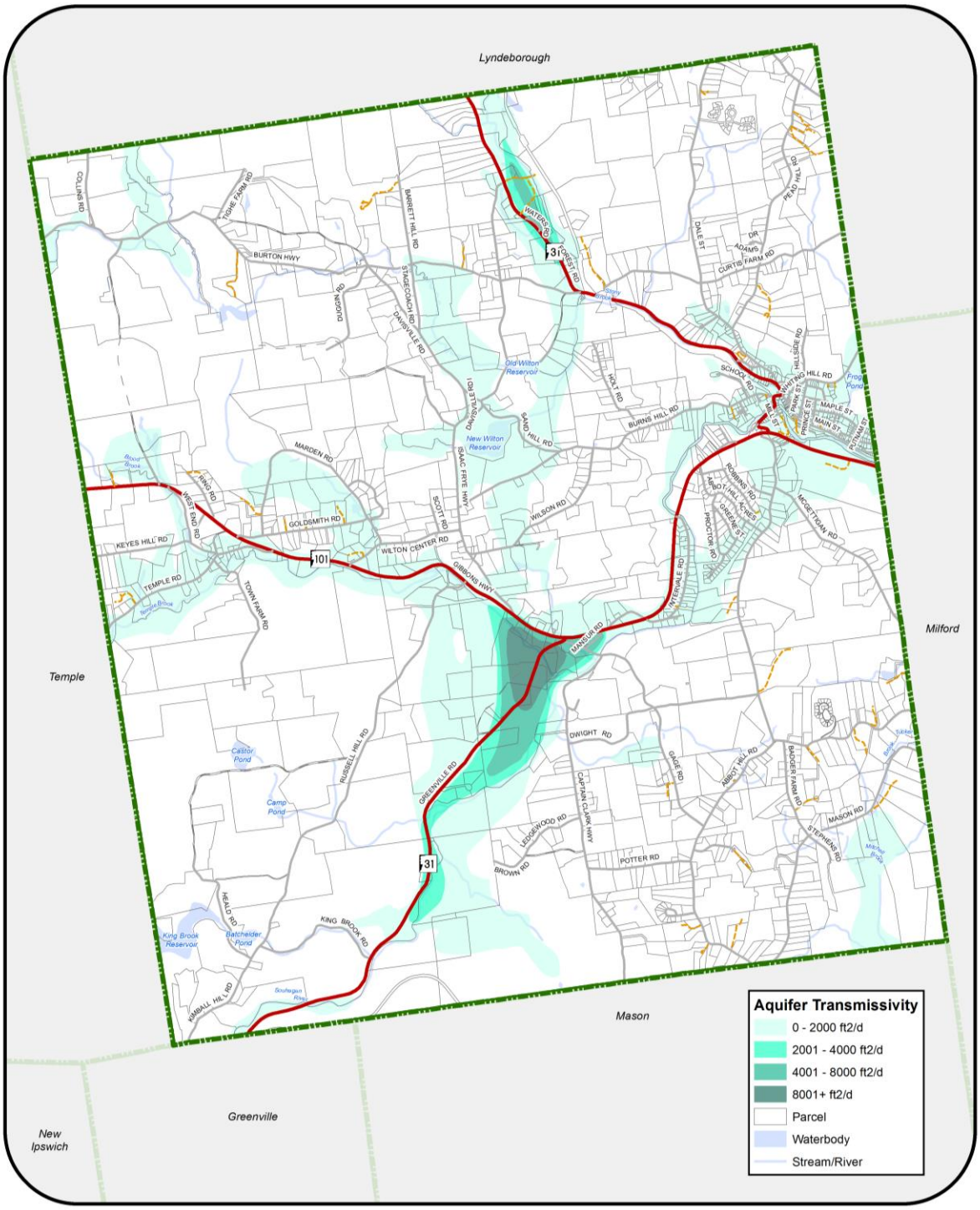
New Hampshire Dept. of Environmental Services Favorable Gravel Well Analysis

In the 1990s, the USGS and NH DES mapped stratified drift aquifers in New Hampshire. The maps showed large areas underlain by these aquifers, however, only a small fraction of these areas is likely to produce high yielding community wells. In response, NH DES developed a technique called Favorable Gravel Well Analysis (FGWA) to analyze these maps and account for constraints to siting a community well. This analysis provides a tool to make better use of stratified drift aquifer maps, helps planners understand the relative scarcity or abundance of potential high-yield well locations, and highlights the need to protect future drinking water resources.

The two constraints considered in the analysis of siting community wells are water quantity and quality. Wells must yield enough water to meet community needs and must be located far enough away from known or potential contaminants to preserve water quality. The FGWA assists in estimating potential well yield (quantity) by eliminating from consideration any stratified-drift aquifer area where the transmissivity is below a certain threshold. The desired yield determines the outcome of the analysis.

According to the 2009 Town of Wilton Natural Resources Inventory prepared by the Society for the Protection of NH Forests for the Wilton Conservation Commission, Wilton's most important water resources are the Wilton Water Works water supply wells located along the Souhegan River. These are high-yield wells in the sand and gravel aquifer along the River and near NH Route 31. Although substantial areas are protected, further land protection is strongly recommended with continued communication between all stakeholders, including the Wilton Water Commission.

Aquifers in Wilton



Data Source(s): - 2000
Aquifer Transmissivity – US Geological Survey (USGS), distributed by NH GRANIT

Identification of Land-Based Resources and Services

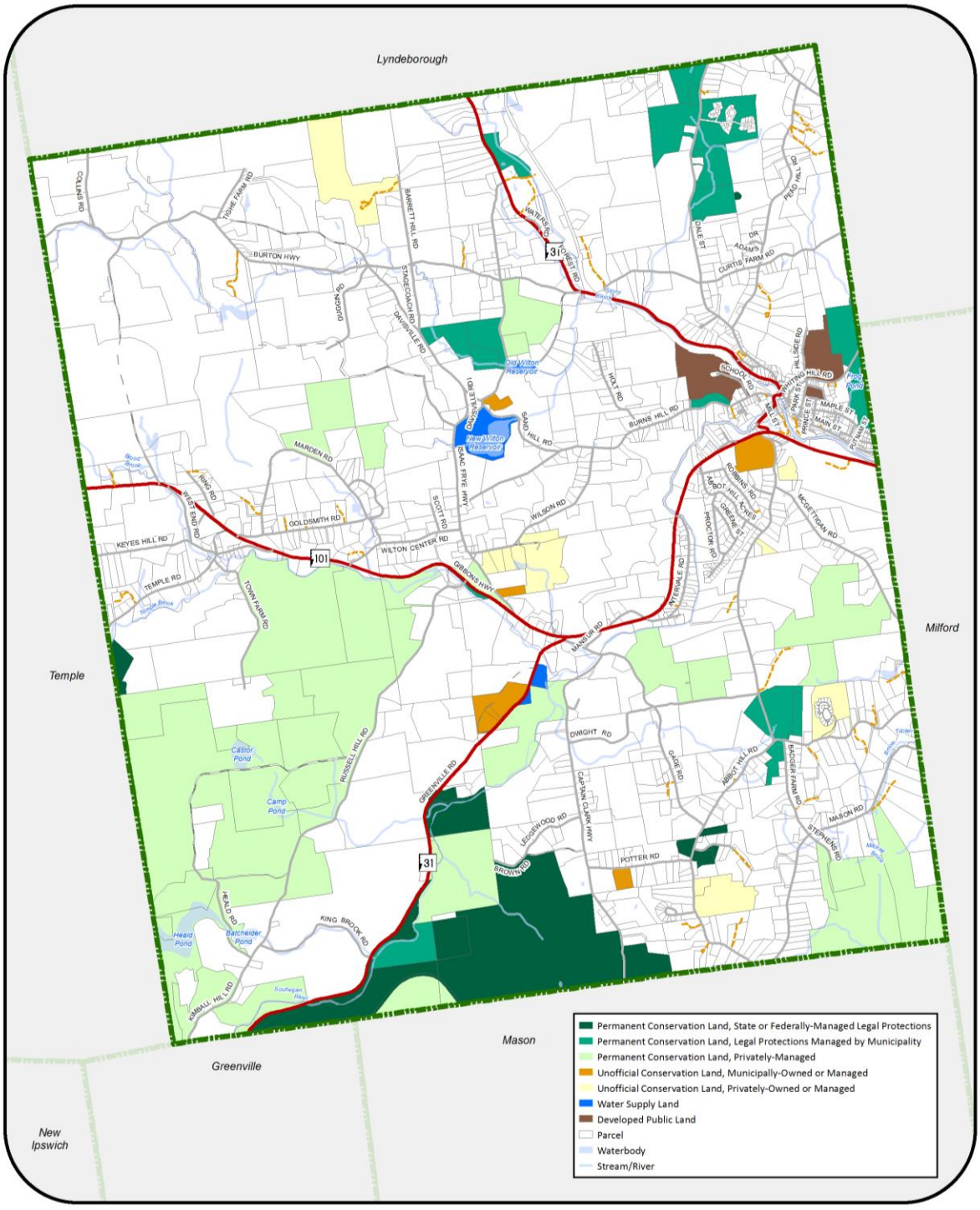
Conserved Land

Conserved, or conservation, lands are areas that are, through various mechanisms and for various purposes, kept from residential and commercial development. Existing conservation lands fall into two basic categories based on level of protection and the primary protection agency. Over the past year NRPC has been working to create a seamless layer that reflects GRANIT's conservation land data and NRPC data collected over the years. GRANIT's template was used as a foundation for the project. Level of Protection and Primary Protection Agency were the chosen categories for maps based on their importance to the towns in the region. Level of Protection is broken into 5 categories: Permanent Conservation Land, Unofficial Conservation Land, Unprotected Water Supply Lands, Developed Land and Unknown. Primary Protection Agency consists of Federal, State, Municipal/County, Private, and Other Public/Quasi-Public Entity. An in depth definition of these and other attributes can be found on NH GRANIT's website. Wilton's existing natural, scenic, historical and agricultural conservation areas and town owned lands are depicted on Map 4.

Summary of Community Opinion on Conservation Land

The 2012 Wilton Community Survey asked citizens whether or not the current amount of conservation land within the town of Wilton aligned with their vision of the future of the town. 35.2% (45 of 128 responses) thought that the current amount of conservation land seems about right. However the same number of people (35.2% or 45 of 128 responses) also thought that the current amount of conserved land was not substantial enough and that there should be more conservation land. 5.5% (7 of 128 responses) believed that there should be less conservation land and the remaining 24.2% (31 of 128 responses) did not have an opinion on this topic. The survey also questioned what actions Wilton should take with regard to nature/hiking trails. In response, 24.2% (30 of 127 responses) thought the Town should acquire more nature/hiking trails and 47.6% (59 of 127 responses) thought the Town should improve its existing nature/hiking trails.

MAP 4—Conserved Lands in Wilton



Data Source(s): - 2015
Conserved Lands – NRPC GIS database, based on NH GRANIT data template

Agriculture

Agricultural land is one of the most important forms of open space in Wilton. In addition to the production of crops and livestock, farms provide scenic vistas and help create rural character. Farming was a major economic activity in Wilton during the 1800's and early 1900's; however, as the population migrated to the cities and more fertile lands in the Midwest, many farms were abandoned with the fields and pastures growing into the forests that exist today. Because of this migration and the agricultural limitations of the climate, New Hampshire relies heavily on other states to produce the majority of its food.

According to the 2009 Natural Resources Inventory, excellent agricultural soils are found evenly and widely distributed across the entire Town of Wilton. These soils tend to cluster on the broad ridge tops as do the most productive forest soils. There are very few large, active farms left in Wilton today. Therefore, it is important for the Town to preserve its good agricultural land for both economic and natural resource reasons. As the importance of local agriculture continues to grow it is important to promote the existence of the local farming community. One such step that the Town could take is to review ordinances to determine if it effectively identifies and promotes the location and nature of the agricultural businesses and agritourism.

Agricultural lands are basically defined in two ways. First, by soil type (identified areas may or may not be actively used for farming) and second, by active agricultural uses, which may or may not be located on agricultural soils. The following sections discuss the existing agricultural resources of the Town based on soils and active agricultural use.

Importance of Soils in Determining Agricultural Land Use

Soil types are one of the most critical determinants of a parcel's capability to support agriculture or other development. This is particularly true in Wilton, where they serve as the sole medium for sewage purification through individual septic systems. Soil data presented in this section comes from three studies by the US Dept. of Agriculture's Natural Resources Conservation Service—"Soil Potentials for Development," "Town of Wilton Soils and their Interpretations for Various Land Uses," and "Soils Survey of Hillsborough County, New Hampshire-Western Part."

Based on soil type, the soils for Hillsborough County have been classified into three categories of farmland: prime and unique farmland, locally significant farmland and farmlands of state significance. Wilton has 903 acres of prime farmland, 8,506 acres of locally significant farmland and 703 acres of state significant farmland. Combined, these three categories constitute 61.3% of the total land area of the Town. Prime, locally and state important farmlands are depicted on Map 5.

- *Prime farming soils*: interpreting from technical soils data, prime agricultural soils have sufficient available water capacity to produce the commonly grown cultivated crops adapted to New Hampshire. They have high nutrient availability, generally low slope and low landscape position, infrequent flooding, and contain less than 10% rock fragments in the top six inches. Prime agricultural soils are best suited for cornfields and other row crops.

- *Soils of local importance*: farmland that is not prime or of statewide importance, but has local significance for the production of food, feed, fiber and forage. In Hillsborough County, this includes all land that is in active farm use, but does not qualify as prime or of statewide importance. Pasture land and hay meadows may be common indicators of locally significant soils.
- *Soils of statewide importance*: land that is not prime but is considered farmland of statewide importance for the production of food, feed, fiber, forage or oilseed crops. Hay meadows not normally in row cropping could indicate soils of statewide importance.

General Soil Types Found In Wilton and Suitability for Agriculture

As delineated on the General Soil Map, Hillsborough County, New Hampshire -Western Part (US Department of Agriculture Soil Conservation Service) the soils in Wilton can be classified into four primary classifications: Colton-Adams-Naumburg; Marlow-Peru; Monadnock-Lyme and Monadnock-Lyman-Tunbridge. A brief description of each follows along with each soil classification's general suitability for agricultural land use; however each classification is more specifically defined in referenced the Soil Survey):

Colton-Adams-Naumburg

The Colton-Adams-Naumberg series of soils consists of very deep, nearly level to very steep, excessively to poorly drained sandy soils located on outwash plains and terraces. Most areas with these soils are wooded and droughtiness is a limitation for crops, hay and pasture.

Marlow-Peru

Marlow-Peru soils are very deep, nearly level to steep, well drained and moderately drained, compact loamy soils and located on uplands and on smooth, oval-shaped hills called drumlins. Most areas containing these soils are forested, however agricultural uses include hay, pasture, and orchards.

Monadnock-Lyme

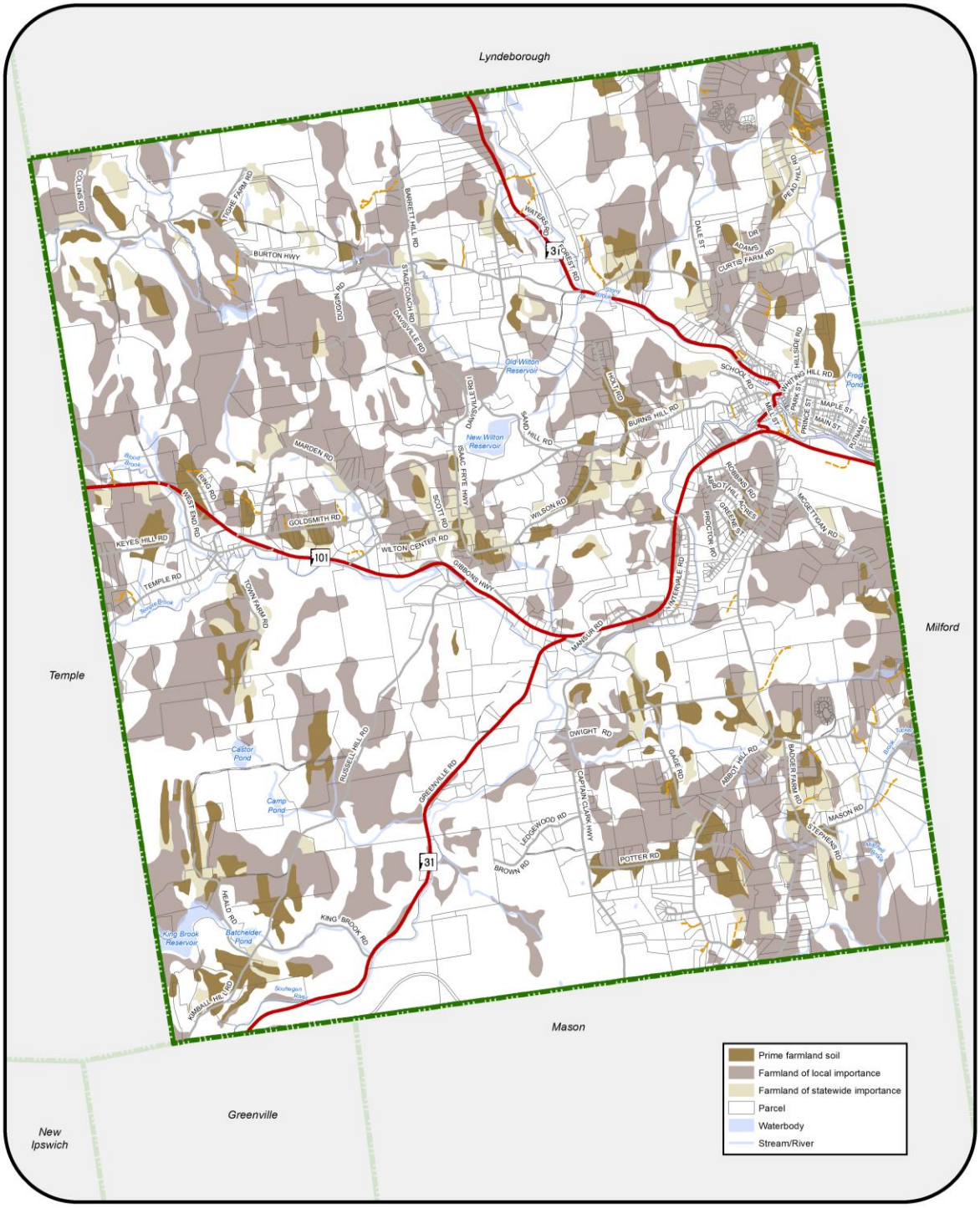
Monadnock –Lyme soils are very deep, nearly level to steep, well drained and poorly drained, loamy soils on uplands. The agricultural uses for these soils include hay, pasture, orchards and crop cultivation.

Monadnock-Lyman-Tunbridge

These soils are generally located in mountainous areas and are very deep to shallow, gently sloping to steep, well drained and somewhat excessively drained, loamy soils located on uplands. The soil is generally suited for hay and pasture, although a few areas are cultivated for crops and orchards.

Certain classifications of Marlow (76B), Peru (78B), and Monadnock (142B) are classified as Prime soils by the Soil Survey with generalized locations indicated on Map 5.

MAP 5 — Prime Soils for Farming



Data Source(s): 2009
Prime Farmland – USDA/NRCS Soil Survey Geographic (SSURGO) Database, courtesy NH Granit

Wildlife

Maintenance of quality habitats is important to the survival of all species. Change is inevitable; however, some species are less able to adapt to changes in habitat than others. The fields, forests, streams and wetlands in Wilton provide habitats for a diversity of wildlife and plant species. The 2009 Natural Resources Inventory (NRI) study evaluated habitat resources and conditions to develop a ranking to identify the highest condition habitat relative to all instances of a given habitat type in the state. The tiers of habitat quality listed below, and shown on Map 6 were based on an intensive statewide analysis:

- **Tier 1** rating was given to areas that contain the *highest condition habitat in the state*.
- **Tier 2** areas contain *the highest condition rank in the biological region* (defined by eco-region for terrestrial habitats, and watershed for wetland and aquatic habitats).
- **Tier 3** includes *supporting landscapes* such as watersheds containing top-ranked stream networks and lakes, large forest blocks, or specific animal, plant and natural community occurrences of special note.

Existing land use conditions in the Town provides habitat for common game and non-game species of birds, amphibians, fish, reptiles, and mammals, such as deer, turkeys, raccoons, pheasant partridge, fox, ducks, Canada geese, eagles and other species native to New Hampshire. In addition, a great blue heron rookery has been located in the Town. The diversity found in types of habitat, ponds, wetlands fields, and forests, means diversity in types of animal species found in the Town. It is important to maintain a balance between fields, naturally succeeding areas, forests and wetlands to ensure the quality and quantity of wildlife habitat. Therefore, the Town should protect different types of habitats to ensure the proliferation of species diversity.

Species Found in Wilton Listed as Threatened or Endangered by NH Natural Heritage Inventory

The NH Natural Heritage Bureau, department of the New Hampshire Division of Forests and Lands, has the mission to find, track, and facilitate the protection of New Hampshire's rare plants and exemplary natural communities. The Natural Heritage Bureau provides information to facilitate informed land use decision-making to help protect the State's natural heritage while meeting land use needs. As of January 2011, the NH Natural Heritage database contained information on more than 6,000 species or natural community occurrences throughout the state.

Table 2 below is derived from the NH Natural Heritage Bureau's January 2011 publication "Rare Plants, Rare Animals, and Exemplary Natural Communities in New Hampshire Towns" for Wilton:

Table 2. Rare Plants and Animals

NH Natural Heritage Bureau

Town Flag	Species or Community Name	Listed? Federal	Listed? State	# reported last 20 yrs Town	# reported last 20 yrs State
Wilton					
	Plants				
	Giant Rhododendron (*Rhododendron maximum*)	--	T	Historical	13
	Vertebrates - Reptiles				
**	Wood Turtle (*Glyptemys insculpta*)	--	SC	3	193
	Vertebrates - Fish				
**	American Eel (*Anguilla rostrata*)	--	SC	1	177
	Invertebrates - Dragonflies & Damselflies				
**	Southern Pygmy Clubtail (*Lanthus vernalis*)	--	--	1	11
**	Spatterdock Darner (*Rhionaeschna mutata*)	--	--	1	21

T= Threatened SC = Special Concern **= Very high importance

The Town also provides habitat for the usual game and non-game species of birds, amphibians, fish, reptiles, and mammals, such as deer, turkeys, raccoons, pheasant partridge, fox, ducks, Canada geese, eagles and other species native to New Hampshire. In addition, a great blue heron rookery has been located in the Town. The diversity found in types of habitat, ponds, wetlands fields, and forests, means diversity in types of animal species found in the Town. It is important to maintain a balance between fields, naturally succeeding areas, forests and wetlands to ensure the quality and quantity of wildlife habitat. Therefore, the Town should protect different types of habitats to ensure the proliferation of species diversity.

Endangered Species

The NH Fish and Game Department is the agency responsible for endangered animal species. NH Natural Heritage Inventory, a part of the Department of Resources and Economic Development (DRED) is responsible for endangered plant species. The Audubon Society records the locations of endangered bird species in the State. There are no known endangered species in Wilton. This does not mean that these particular species are not present in the Town, just that none have been documented. More information about specific endangered species and their habitats can be found at each of these agencies' websites and in the Wildlife Action Plan. The Conservation Commission should consider contacting these agencies every few years to keep apprised of changes to endangered species in the Town and the State.

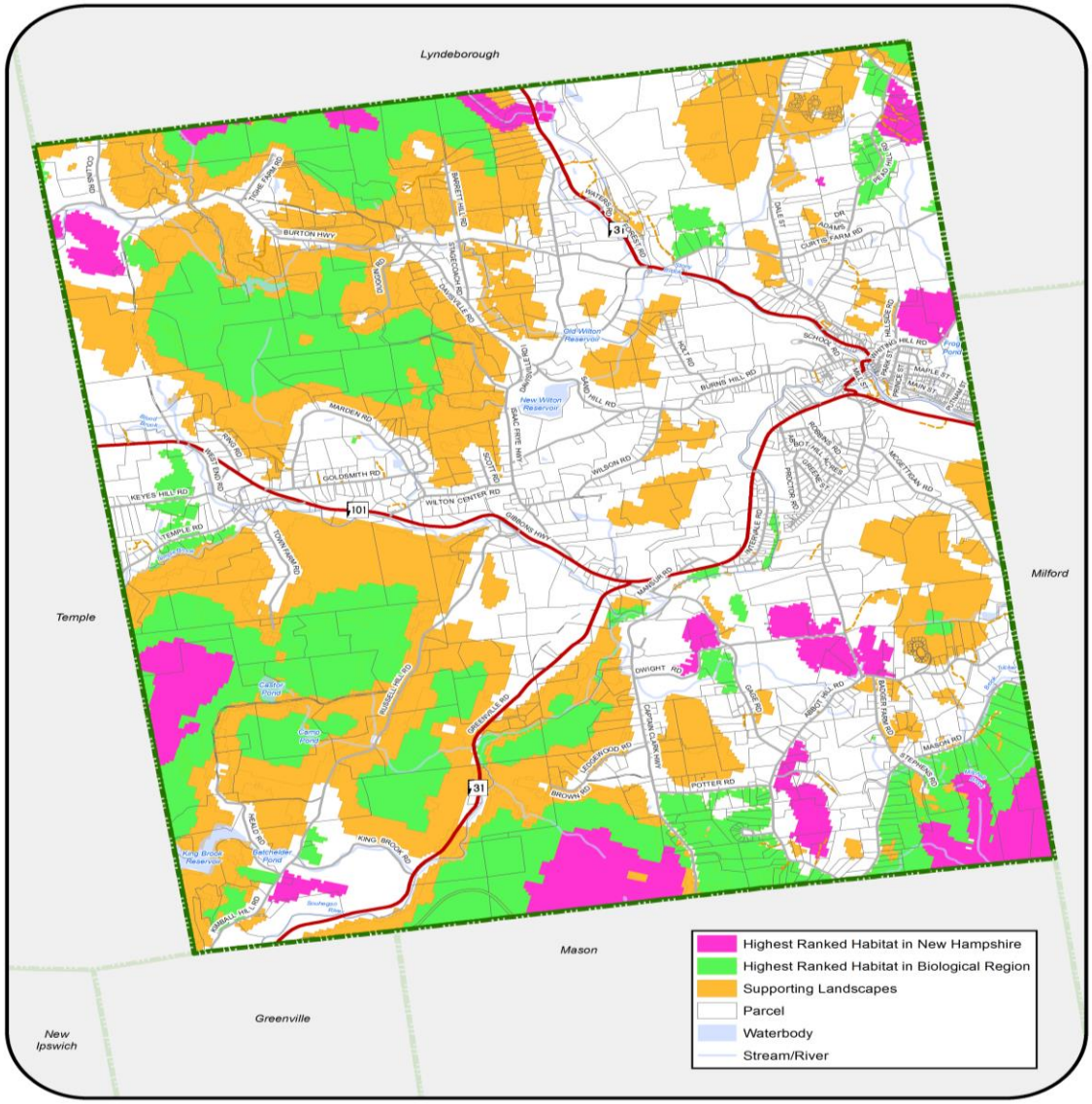
Strategies for Managing Land for Wildlife

Since many species require a large territory to find food and adequate breeding grounds, wildlife habitat protection should occur at the largest scale possible. Small, isolated segments of habitat may not contain enough resources to sustain a species, resulting in its decline. Maintaining contiguous habitat blocks as development occurs will protect wildlife and create a network of viable habitats. A model Habitat Management Ordinance is available in the Innovative Land Use Planning Techniques Handbook, A Handbook for Sustainable Development, NH Department of Environmental Services, October 2008. The model addresses the importance of preserving wildlife habitat by identifying several key priniciples:

- Maintaining the ability of ecological systems to provide ecosystem functions necessary to maintain wildlife habitat and the multiple benefits to wildlife and humans provided by such habitat,
- Maintaining unfragmented habitat blocks,
- Connecting habitat patches to create wildlife corridors and facilitate wildlife movement between areas,
- Protecting wildlife from the negative impacts of development, including not only negative impacts to the habitat itself, but also to animal behavior and life cycle activities,
- Requiring site-specific habitat assessment when appropriate to protect wildlife from potentially negative impacts of development.

As the Town continues to grow it is recommended that these wildlife protection principles be considered as development occurs and the Planning Board and Conservation Commission consider implementing the tools for effective wildlife protection.

MAP 6—Wildlife Habitat



Data Source(s): - 2015
Natural Wildlife Habitat Areas – NH Fish and Game NH Wildlife Action Plan 2015, courtesy NH GRANIT

Visual Resources – Slope and Scenic Vistas

Slope Categories and Associated Land Use Implications

Slope measures the pitch or steepness of land between two points. It is expressed as a percentage, which is calculated by dividing the change in elevation between two points by the distance between the two points. Steep slopes are defined as having 15 feet or greater of vertical rise over 100 feet of horizontal run, or a 15% slope. Maps and descriptions of slopes should not be used as a definitive guide to where development should and should not occur. Rather, specific site characteristics should be investigated to identify potential problems and to decide whether they can be overcome. Slope data must be used in conjunction with soil and water resources data to determine a specific site's natural capability to support a proposed use. Map 7 shows the existing topography of Wilton with contour lines at 20' intervals. For reference, the closer together the topographic lines, the steeper the slope.

Slopes are generally classified based on their ability to support development and are broken down into 4 categories. Slopes of 0-8% are considered developable with few constraints. Slopes of 8-15% can be developed but costly of special design considerations may be necessary due to the steepness of the area. Areas with slopes 15-25% and greater than 25% present significant constraints for development and potential hazards for the environment. Therefore, these areas should not be developed. Aside from development considerations, the contrasts in slope provide the waterfalls and cliffs, gently rolling fields, low, winding river beds, ponds, wetlands and bubbling brooks that people find visually appealing.

Visual Resources in Wilton

Elevation and slope are two major components comprising the visual resources of a community. Elevations provide both the high points for viewing the scenic vistas and the subjects of the views from lowland areas or smaller hills. Slope provides the subtle and dramatic changes in the land surface that make the views interesting. Together they are the two major components of topography.

Wilton's topography is typified by sloping and gently rolling hills, cut by low-lying areas running east-west and north-south along the Souhegan River and its tributary streams. Elevations in Wilton range from a low of approximately 320 feet above Mean Sea Level (MSL) in the Town center bordering Milford to just over 1140 feet in the southwestern part of Town approaching Fisk Hill in Temple. The majority of the higher elevations, those greater than 900 feet are located in the western section of the Town. High elevations in the eastern section of Wilton range between 700-800 feet with a few areas in the 900 foot range located primarily in the Abbot Hill area. Map 7 shows the contour lines in Wilton.

The high elevations in Wilton provide opportunities for viewing the scenic beauty of the Town and the surrounding countryside and these areas should be accessible to the public for passive recreational use. Development on the Town's hilltops would significantly alter the Town's rural character; and clear-cut logging operations on hillsides can turn beautiful scenes into marred landscapes overnight. Therefore, the scenic vistas need to be maintained through the use of good forest and agricultural management practices.

The Conservation Commission conducted an inventory of the scenic vistas and views within the Town. These areas are depicted on Map 8.

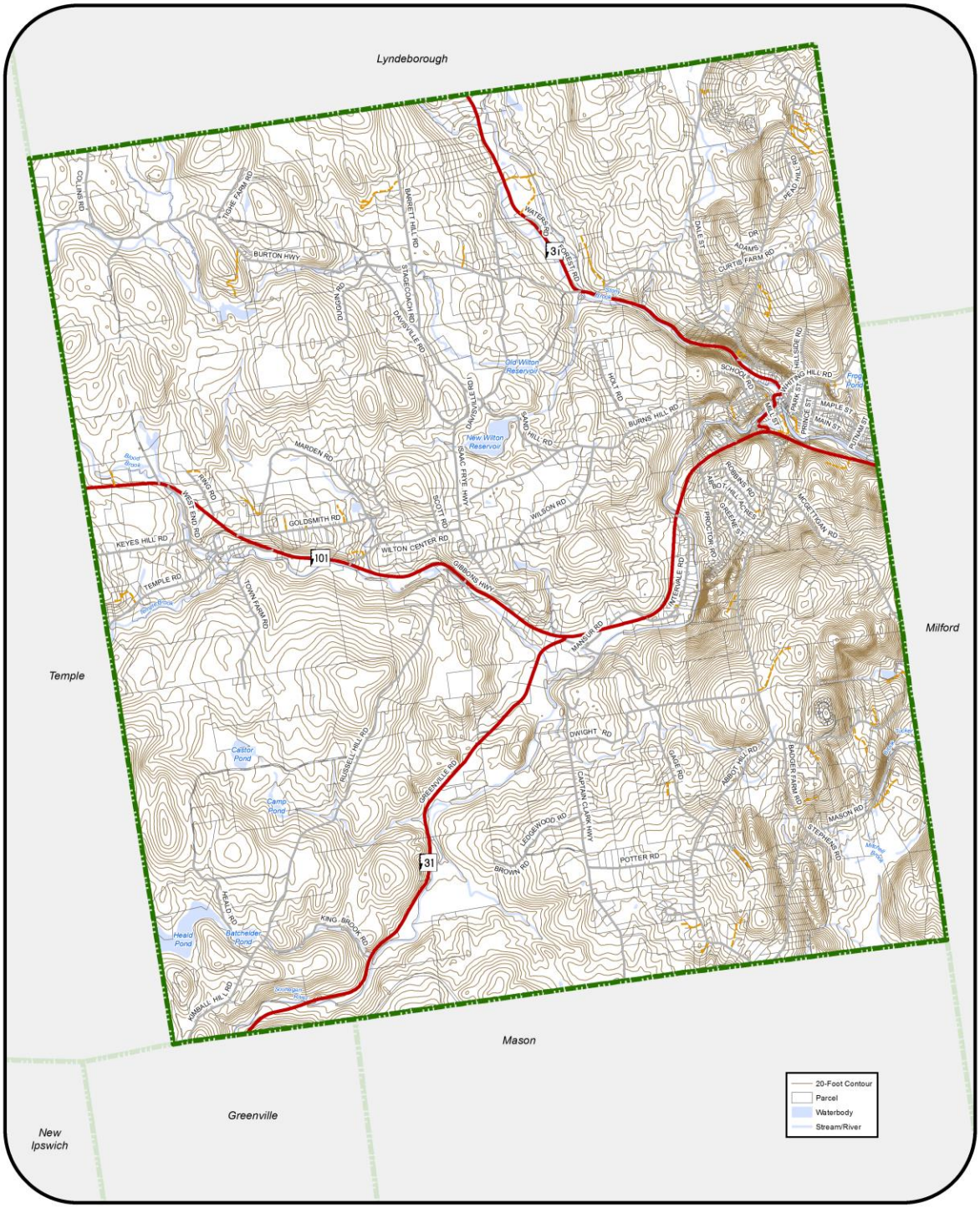
Scenic Roads

The Town of Wilton contains many miles of scenic roads bounded by rivers and streams, wetlands, agricultural areas, woods and the characteristic rock wall. These scenic roadways in many instances represent the essence of Wilton's rural character. State statute, RSA 231:157, grants towns the authority to designate local scenic roads. Once a road has been designated a scenic road, any repair, maintenance, reconstruction or paving work shall not involve or include the cutting or removal of medium and large-sized trees (with a circumference of 15 inches or more at a point four feet from the ground), or the tearing down or destruction of stone walls, except with prior written consent of the Planning Board or any other official Town body designated at Town meeting to implement the law, and after a public hearing. The law is flexible, however in that it allows the highway superintendent to cut trees, shrubs, vegetation and remove obstructions within three feet of the traveled way without consent.

Scenic road designation protects the scenic qualities of the road. At present, there are seven (7) designated scenic roads totaling seven (7) miles in Wilton, Kimball Hill Road, Heald Road, King Brook Road, Wilson Road, Sand Hill Road, Russell Hill Road and Dwight Road. The existing scenic roads in Wilton are depicted on Map 8.

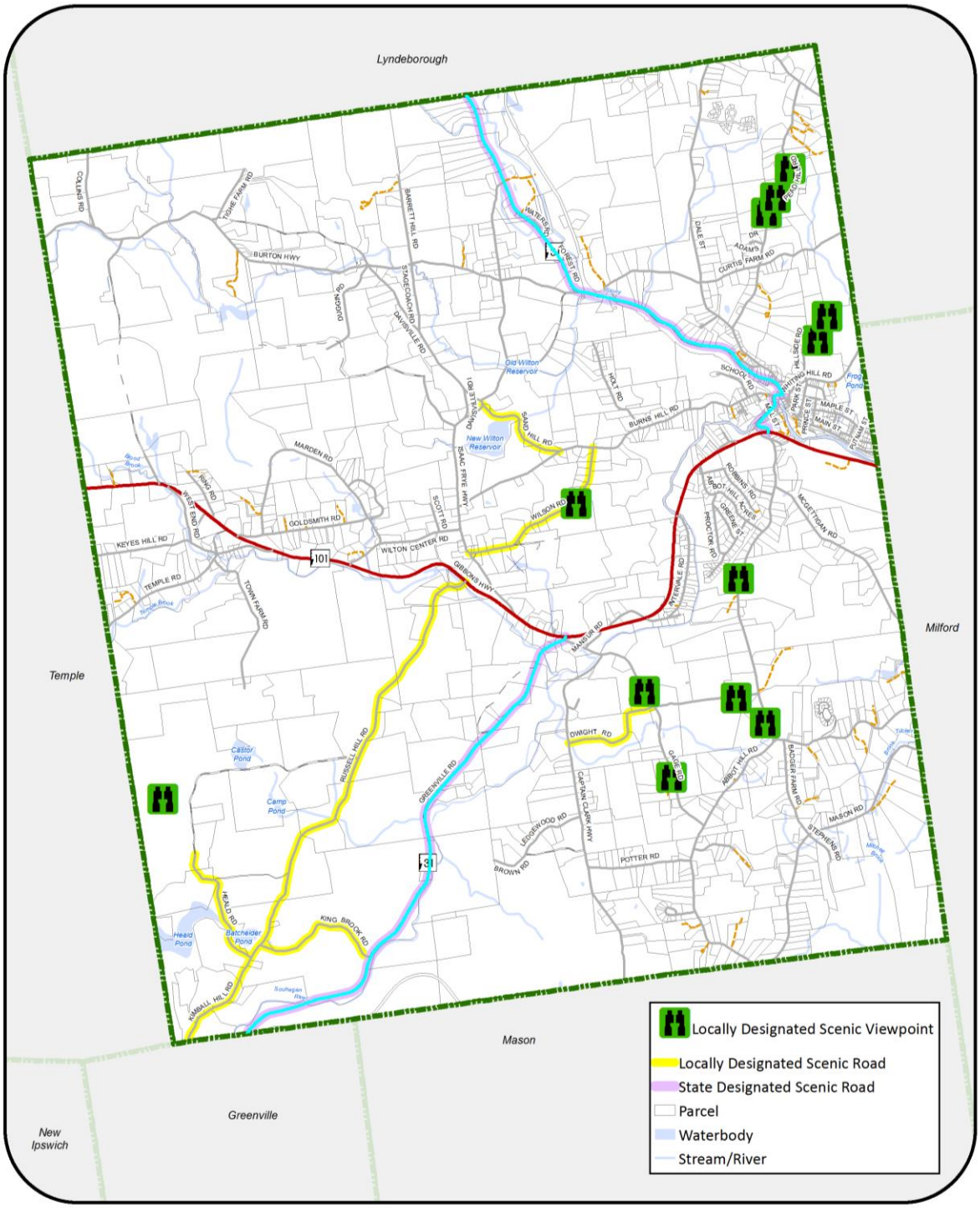
There are many roads or stretches of road in Wilton with scenic qualities and character deserving of protection. The Conservation Commission should inventory the Town's roads and organize the residents to petition for scenic road designation at Town meeting.

MAP 7—Slope



Data Source(s): - 2013
Contours - US Geological Survey (USGS), distributed by NH GRANIT

Map 8 – Locally Designated Scenic Roads and Vistas

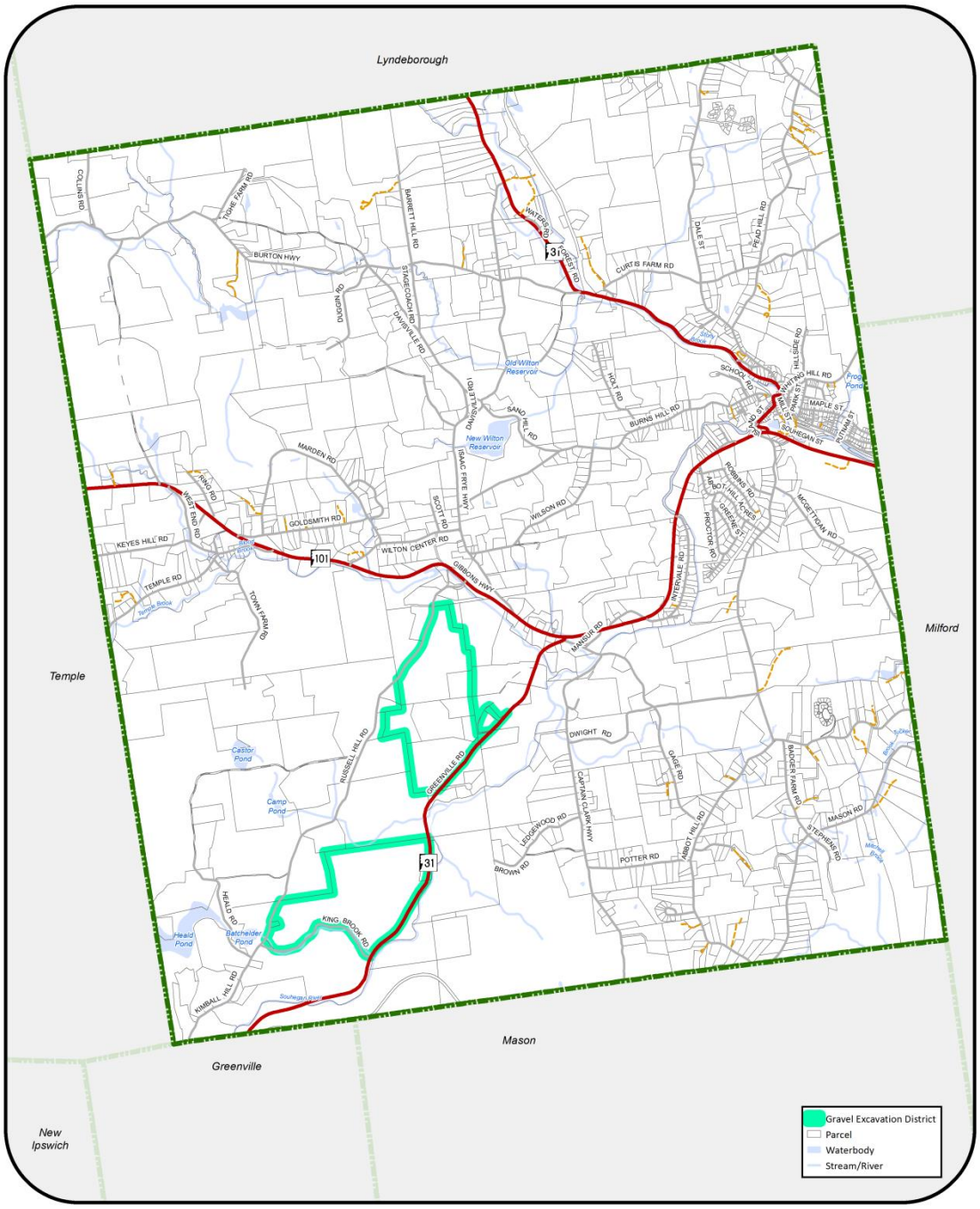


Data Source(s): - 2009
Locally-Designated Scenic Roads – NRPC GIS Database
Scenic Viewpoints – Town of Wilton Natural Resources Inventory (NRI).

Excavation Materials

Wilton has a significant supply of excavation material resources and several excavation operations. Commercial sand and gravel operations can alter the land's ability to filter and recharge groundwater and if these operations are not carefully carried out there is potential degradation of water quality and groundwater contamination due to diminished filtering capacity of the soil if excessive material is removed. The Town has taken steps, most recently in 2014 and 2015, to update and enhance its site plan review regulations for mining and excavation operations that are consistent with New Hampshire RSA Chapter 155-E, as well best practices for stormwater and erosion control.

Map 9 – Gravel Excavation Overlay District



Data Source(s): - 2015
Zoning – NRPC GIS Database and Town of Wilton Zoning Ordinance

Priorities for Natural Resource Management

Natural resource management is critical to Wilton's community character, quality of life, and recreation opportunities. All natural systems are interconnected and both existing and future land uses must consider impacts that affect their health and sustainability. The 2015 Wilton Conservation Plan identifies four significant assets of the community which have been determined by the Town to be essential elements in for planning:

- Conserve Prime Agricultural and Habitat Resources
- Create Corridors for Wildlife Habitat Protection
- Preserve Scenic and Unique Natural Resources for Outdoor Exploration
- Preserve the Quality of Surface Waters and Groundwater for the Future.

In conjunction with the recommended actions included in the Conservation Plan to protect and enhance these assets, further recommendations for managing the natural resources of the Town include:

1. To protect surface waters, wetlands, and individual water supplies the Town should consider adopting more stringent setback requirements, or developing technical expertise to assist in the proper location of septic systems and prevent contamination.

2. Although substantial areas are protected, further land protection is strongly recommended with continued communication between all stakeholders, including the Wilton Water Commission.

3. The Town should review its current sign ordinance to determine if it effectively identifies and promotes the location and nature of agricultural businesses and agritourism.

4. The Town should protect wildlife habitat to ensure the proliferation of species diversity by implementing appropriate tools for wildlife protection.

5. The Conservation Commission should monitor the most current lists of endangered species in the Town.

6. The Conservation Commission should inventory the Town's roads and organize the residents to petition for scenic road designation at Town meeting as needed.

7. The Town should continually assess the effectiveness of its subdivision, site plan, and zoning regulations in managing its surface water, wetlands, and floodplain protection measures; stormwater management; agricultural resources; wildlife habitats; scenic resources; and excavation materials.

8. The Town should explore the viability of potential uses of the new reservoir.